

What is claimed is:

1. An identification code-assigning system in a home network that is a means for assigning an identification code to each of appliances in the home network having a plurality of sub-networks, comprising:

5 an appliance-side identification code assignment-requesting means for requesting a home network side to assign an identification code that identifies an appliance in the home network when the appliance is started for the first time after the home network has been configured, such as when the appliance is started for the first time after the appliance has been newly  
10 installed in a region where the home network has already been provided, when the appliance is started after the home network has newly been provided and activated, or when a start-up signal is received from the home network side at the activation; and

15 a system-side identification code generating and-reporting means for generating an identification code according to a predetermined procedure and reporting it to the appliance in response to a request for assignment of an identification code for the home network system from the appliance, the appliance being, in effect, newly installed in the home network irrespective of which of the newly installed appliance or the home network has been  
20 provided earlier.

2. The identification code-assigning system in a home network according to claim 1, wherein the appliance-side identification code assignment-requesting means comprises:

means for acquiring, prior to acquisition of the identification code, an appliance identification code for a sub-network to which the appliance belongs within the sub-network; and

5 means for acquiring a sub-network identification code assigned to the sub-network, subsequent to acquisition of the appliance identification code for the sub-network.

3. The identification code-assigning system in a home network according to claim 1 or 2, wherein:

10 the system-side appliance identification code-generating and reporting means is built into a sub-network, and comprises:

a means for acquiring a sub-network identification code for the home network according to a predetermined procedure in the home network subsequent to acquisition of an individual appliance identification code for the sub-network to which the appliance belongs;

15 a first means for assigning, after the home network identification code has been established, an identification code for the home network to each of the appliances that have been already connected to the sub-network; and

20 a second means for assigning an identification code for the sub-network to an appliance that is in effect newly installed in the system, in response to a request for assignment of an identification code for the system from the newly installed appliance.

4. The identification code-assigning system in a home network according to claim 1, 2, or 3, wherein:

the appliance-side identification code assignment-requesting means is such that, when requesting assignment of an identification code, a message that requests assignment of an identification code, contains a classification code representing a type of appliance determined by such as original functions, effects, and purposes thereof; and

the system-side identification code-generating and reporting means recognizes the type of the appliance that is to be in effect newly installed in the system based on the classification code representing the type of the appliance contained in the message that requests assignment of an identification code, and reports the classification code as well as the generated identification code of the appliance to a control section in order to be registered.

5. The identification code-assigning system in a home network according to claim 1, 2, 3, or 4, wherein:

15 when a request for assignment of an identification code is received from the identification code assignment-requesting means, the system-side identification code-generating and reporting means sequentially assigns unused numbers from the numbers predetermined for each classification to at least a specific type of appliance if the request contains a classification code of type of appliance.

20 6. The identification code-assigning means according to claim 1, 2, 3, 4, or 5, wherein:

the home network comprises a plurality of routers; and

the system-side identification code-generating and reporting means comprises:

a parent router-contained system-side identification code-generating and reporting means provided only in a specific router of the plurality of routers; and

a-general router-contained system-side identification code-generating and reporting means that is contained in a general router and reports a sub-network identification code assigned by the intra-parent router system-side identification code-generating and reporting means to the appliances in the sub-network.

7. An identification code acquiring system for an home network compatible appliance, comprising:

an intra-sub-network identification code-storing means for storing an intra-sub-network identification code of the appliance in a home network;

a sub-network identification code-storing means for storing a sub-network identification code;

a sub-network identification code-requesting means that requests, using a predetermined means, the home network to assign a sub-network identification code of a sub-network to which the appliance belongs at a predetermined time after the sub-network identification code has been acquired at the first start-up or activation of the appliance, the predetermined means including a power line, a wireless communication, and an infrared ray and the predetermined time including a prescribed hour, a time interval, and a time when a notification is received from a home

network side newly provided after the appliance has been installed; and

an identification code reception-controlling means that controls the identification code-requesting means so as to continue the request of assignment of an identification code of the appliance at the predetermined time until a response is received for the request from the sub-network identification code-requesting means, if there is no response to the request, and that controls the identification code-requesting means so as to stop further requests and stores the received identification code in the storing means, if a notification of the identification code is received from the home network side in response to the request.

8. An identification code acquiring system for an home network compatible appliance, comprising:

an intra-sub-network identification code-storing means that stores an intra-sub-network identification code of an appliance in a home network;

15 a sub-network identification code storing means that stores a sub-network identification code;

an intra-sub-network identification code-requesting means that sends an intra-sub-network identification code which has been created according to a predetermined program to the home network using a predetermined means and that requests the home network to assign it as the identification code of the appliance for the home network at a predetermined time, the predetermined means including a power line, a wireless communication, and an infrared ray, and the predetermined time including a time when the appliance is started up or activated for the first time, a predetermined hour,

a predetermined time interval, and a time when a notification is received from a home network that is newly installed after the appliance has been installed; and

5 an identification code reception-controlling means that controls the storing means so as to store the intra-sub-network identification code as the intra-sub-network identification code of the appliance if there is no response to the request, and that controls the identification code-requesting means so as to create another identification code and to request again to assign the other identification code as the identification code of the appliance, if a 10 notification of rejection is received.

9. The identification code-acquiring system for a home network compatible appliance according to claim 8, wherein the identification code-requesting means comprises a means for generating, when requesting assignment of a desired identification code in the home network, an 15 identification code using at least one of calendar or clock information.

10. The identification code-acquiring system for a home network compatible appliance according to claim 8 or 9, wherein the identification code-requesting means comprises a means for generating, when requesting assignment of an identification code for the appliance in the home network, 20 an identification code using a predetermined sequential number and an invariable classification code representing an appliance type determined by the appliance's original functions, effects, purposes, and the like.

11. A home network including an apparatus having the identification

code acquiring means

according to claim 7, 8, 9, or 10, comprising:

a plurality of routers;

wherein only one of the plurality of routers is a parent router having a

5 function of assigning an identification code to an appliance that has in effect  
been newly installed in the home network according to a predetermined  
procedure in response to a request for assignment of an identification code  
from the identification code assignment-requesting means.

12. An appliance compatible with a home network system, comprising:

10 a storing means for storing an identification code of the appliance that  
has been acquired in the home network, the storing means being  
non-volatile and writable at least one time after power has been recovered;  
an on-off recognizing means for recognizing on and off of a power  
supply;

15 a checking means for checking whether or not the identification code of  
the appliance is stored in the storing means in response to a recognition  
notification of power-on is received from the on-off recognizing means; and

20 an identification code-acquiring means that uses the identification code  
subsequently if the checking means confirms that the identification code is  
stored, but lets the appliance request the home network to assign an  
identification code of the appliance if the checking means confirms that the  
identification code is not stored.

13. A router in a home network system, comprising:

an identification code information-storing means for storing, in relation to an appliance that requests an identification code for identifying the appliance in the home network with a classification code representing a type of the appliance, information containing an year of the request together with 5 the type of the appliance and the identification code assigned thereto;

an existence confirming means for confirming the presence or absence of an appliance showing a long elapsed time from assignment of an identification code by carrying out at least either interrogation according to a predetermined procedure or confirmation of continuation of the absence of 10 notification based on at least one information including a request of an identification code assignment from a given type of appliance newly installed in the home network, the number of identification codes that has been stored for a given type of appliance, the elapsed time from the assignment of an identification code, and changes of years and months;

15 a deleting means for deleting from the identification code information-storing means information about the appliance that has been determined to be absent if the existence confirming means determines that the appliance is absent.

14. A router function-performing means that is built into an appliance, 20 comprising:

a router appliance classification-storing means for storing in advance classification of appliances that are capable of performing a router function;

a grade information transmission-requesting means that requests, when the appliance performs a router function in a home network system,

transmission of information about the grade of a router function of a newly installed appliance upon receiving a request for assignment of an identification code with a classification code representing the type of appliance from the newly installed appliance, if it is found that the classification code is stored in the router appliance classification-storing means by checking whether the classification code is stored therein or not;

5 a stored information-transmitting means that transmits information about appliances installed in the home network, the information being stored in the appliance in order to perform a router function, upon receiving the information about a grade of a router function if the grade of the received information is higher than the grade that the appliance is capable of performing; and

10 a stopping means for stopping the router function after the information has been transmitted for the purpose of upgrading.

15 15. A router function-performing means that is built into an appliance, comprising:

a stored information-transmitting means that transmits, when the appliance performs a router function in a home network system, information about appliances installed in a home network upon receiving from a newly-installed appliance a request for assignment of an identification code with information about a grade of a router function that the newly installed appliance is capable of performing and a classification code representing a type of the appliance if it is found that the grade of the newly installed appliance is higher than the grade that the appliance is capable of

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performing by comparing them; and

a stopping means for stopping the router function after the information has been transmitted for the purpose of upgrading.

16. A router function-performing means that is built into an appliance,  
5 comprising:

an identification code assignment-requesting means that assigns an identification code for a home network together with a classification code representing a type of appliance when the appliance is newly installed in the home network;

10 a grade information-returning means that returns information about a grade of a router function that the appliance is capable of performing if a home network side requests the appliance to transmit the information;

15 a received home network information-storing means that stores information about an appliance that is installed in the home network if the information is transmitted from the home network as a result of the acknowledgement; and

an upgrading means that lets the appliance perform a router function with a predetermined procedure after the information has been received.

17. A router function-performing means that is built into an appliance,  
20 comprising:

an identification code assignment-requesting means that assigns an identification code for a home network together with information about a grade of a router function that the appliance is capable of performing and a

classification code representing a type of appliance when the appliance is newly installed in the home network;

5 a received home network information-storing means that stores information about an appliance that is installed in the home network if the information is sent from the home network as a result of transmission of the request; and

an upgrading means that lets the appliance perform a router function according to a predetermined procedure after the information has been transmitted.